

# Safety Data Sheet

## According to OSHA and ANSI

Printing date 01/31/2013

Reviewed on 05/23/2012

### 1 Identification of the substance/mixture and of the company/undertaking

**Product identifier**
**Product name:** Titanium, plasma standard solution, Specpure®, Ti 1000µg/ml
**Stock number:** 35768

**Details of the supplier of the safety data sheet**
**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

**Information Department:** Health, Safety and Environmental Department

**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

### 2 Hazards identification

**Classification of the substance or mixture**
**Classification according to Regulation (EC) No 1272/2008**


GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**


C; Corrosive

R34: Causes burns.



Xn; Harmful

R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.

**Label elements**
**Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

**Hazard pictograms**


GHS05



GHS06

**Signal word** Danger

**Hazard-determining components of labelling:**

Nitric acid

Hydrogen fluoride

**Hazard statements**

H331 Toxic if inhaled.

H314 Causes severe skin burns and eye damage.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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**Hazard description:****WHMIS classification**

D2B - Toxic material causing other toxic effects

E - Corrosive material

**Classification system****HMIS ratings (scale 0-4)**

(Hazardous Materials Identification System)

HEALTH	3
FIRE	0
REACTIVITY	1

Health (acute effects) = 3

Flammability = 0

Reactivity = 1

**Other hazards****Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

### 3 Composition/information on ingredients

**Chemical characterization: Mixtures****Dangerous components:**

7697-37-2	Nitric acid	5.0%
	⚠ Ox. Liq. 3, H272; ⚠ Skin Corr. 1A, H314	
7664-39-3	Hydrogen fluoride	0.1%
	⚠ Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; ⚠ Skin Corr. 1A, H314	

**Additional information**

Contains:

Ti 1000µg/ml

**Non-Hazardous Ingredients**

7732-18-5	Water	94.9%
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### 4 First aid measures

**Description of first aid measures****General information** Immediately remove any clothing soiled by the product.**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

Rub in calcium gluconate solution or calcium gluconate gel immediately.

**After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing** Seek medical treatment.**Information for doctor****Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Firefighting measures

**Extinguishing media****Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

**Special hazards arising from the substance or mixture**

If this product is involved in a fire, the following can be released:

Hydrogen fluoride (HF)

Nitrogen oxides (NOx)

Metal oxide fume

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**Advice for firefighters****Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

**Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

**Reference to other sections**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage****Handling****Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

**Information about protection against explosions and fires:** The product is not flammable**Conditions for safe storage, including any incompatibilities****Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:**

Store away from strong bases.

Water reacts with many metals to give hydrogen, often violently. Water is also incompatible with many reactive organic and inorganic chemicals.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**Specific end use(s)** No further relevant information available.**8 Exposure controls/personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Control parameters****Components with limit values that require monitoring at the workplace:****7697-37-2 Nitric acid (5.0%)**PEL (USA) 5 mg/m<sup>3</sup>, 2 ppmREL (USA) Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5 mg/m<sup>3</sup>, 2 ppmTLV (USA) Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5.2 mg/m<sup>3</sup>, 2 ppm

EL (Canada) Short-term value: 4 ppm

Long-term value: 2 ppm

EV (Canada) Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5 mg/m<sup>3</sup>, 2 ppm**7664-39-3 Hydrogen fluoride (0.1%)**

PEL (USA) 3 ppm

as F

REL (USA) Short-term value: C 5\* mg/m<sup>3</sup>, C 6\* ppmLong-term value: 2.5 mg/m<sup>3</sup>, 3 ppm

\*15-min, as F

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TLV (USA)	Short-term value: C 1.64 mg/m <sup>3</sup> , C 2 ppm Long-term value: 0.41 mg/m <sup>3</sup> , 0.5 ppm as F; Skin
EL (Canada)	Short-term value: C 2 ppm
EV (Canada)	0.5 ppm as F

**Ingredients with biological limit values:****7664-39-3 Hydrogen fluoride (0.1%)**

BEI (USA)	3 mg/g creatinine Medium: urine Time: prior to shift Parameter: Fluorides (background, nonspecific)
	10 mg/g creatinine Medium: urine Time: end of shift Parameter: Fluorides (background, nonspecific)

**Additional information:** No data**Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use suitable respirator when high concentrations are present.**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

**Eye protection:**

Tightly sealed goggles

Full face protection

**Body protection:** Protective work clothing.

## 9 Physical and chemical properties

**Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Liquid
Color:	Clear
Odor:	Not determined
Odor threshold:	Not determined.

**pH-value:** Not determined.**Change in condition**

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Product is not selfigniting.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure at 20°C (68 °F):	23 hPa (17 mm Hg)
Density:	Not determined
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible
Partition coefficient (n-octanol/water):	Not determined.

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<b>Viscosity:</b>	
dynamic:	Not determined.
kinematic:	Not determined.
<b>Solvent content:</b>	
Organic solvents:	0.0 %
Water:	94.9 %
<b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

### Reactivity

#### Chemical stability

#### Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions** Water reacts violently with alkali metals.

#### Incompatible materials:

Bases

Cyanides

Sulfides

Water reacts with many metals to give hydrogen, often violently. Water is also incompatible with many reactive organic and inorganic chemicals.

#### Hazardous decomposition products:

Hydrogen fluoride

Nitrogen oxides

Metal oxide fume

## 11 Toxicological information

### Information on toxicological effects

#### Acute toxicity:

#### LD/LC50 values that are relevant for classification:

##### 7697-37-2 Nitric acid

Inhalative	LC50/4H	0.13 mg/l/4H (rat)
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##### 7664-39-3 Hydrogen fluoride

Inhalative	LC50/1H	1276 ppm/1H (rat)
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#### Primary irritant effect:

**on the skin:** Corrosive effect on skin and mucous membranes.

**on the eye:** Strong corrosive effect.

**Sensitization:** No sensitizing effects known.

**Subacute to chronic toxicity:** Harmful if inhaled.

#### Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

Danger through skin absorption.

Toxic if swallowed.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute and/or other multiple dose toxicity data for components in this product.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive and/or mutation data for components in this product.

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Corrosive

## 12 Ecological information

### Toxicity

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability** No further relevant information available.

#### Behavior in environmental systems:

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

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**Additional ecological information:****General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

### 13 Disposal considerations

**Waste treatment methods**

**Recommendation** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

**UN-Number**

DOT, ADR, IMDG, IATA

UN3264

**UN proper shipping name**

DOT, IMDG, IATA

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
(NITRIC ACID, Hydrofluoric acid)

ADR

3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
(NITRIC ACID, Hydrofluoric acid)**Transport hazard class(es)**

DOT

**Class**

8 Corrosive substances.

**Label**

8

ADR

**Class**

8 (C1) Corrosive substances

**Label**

8

IMDG, IATA

**Class**

8 Corrosive substances.

**Label**

8

**Packing group**

DOT, ADR, IMDG, IATA

III

**Environmental hazards:****Marine pollutant:**

No

**Special precautions for user**

Warning: Corrosive substances

**Danger code (Kemler):**

80

**EMS Number:**

F-A,S-B

**Segregation groups**

Acids

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

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**UN "Model Regulation":**UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC,  
N.O.S. (NITRIC ACID, Hydrofluoric acid), 8, III

### 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

**Information about limitation of use:**

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**Other regulations, limitations and prohibitive regulations**

**Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients are listed.

**REACH - Pre-registered substances**

All ingredients are listed.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing MSDS:** Health, Safety and Environmental Department.

**Contact:**

Zachariah C. Holt  
Global EHS Manager

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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